October 15, 2021

Remediation and Reuse Branch
Land and Chemicals Division
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard, LU-9J Chicago, IL 60604

Attention: Ms. Jean Greensley
Corrective Action Section

Subject: Progress Report, Second and Third Quarters 2021

CERTA Vandalia LLC
250 Northwoods Blvd.
Vandalia, Ohio U.S.
EPA ID #OH0 000 048 454

Dear Ms. Greensley:

This submittal constitutes the progress report for work completed during the Second and Third Quarters 2021, related to the above-referenced facility. As you are aware, CERTA Vandalia LLC (CERTA) purchased the facility on September 8, 2017 and signed a new Administrative Order on Consent (RCRA Docket Number RCRA-05-2017-0023) on September 22, 2017, for continuation of ongoing remediation activities. CERTA continued operating the groundwater migration control system and the existing remediation project at the facility during this reporting period.

Effective September 1st, 2018, the Center for Ecolonomic Excellence and Development (CEED) formerly, the Institute of Ecolonomics (IOE), is responsible for environmental site management and for submitting this report.

Work performed the Second Quarter 2021 (April 1- June 30, 2021) and Third Quarter 2021 (July 1 – September 30, 2021)

- Surface water samples from two (2) locations along the unnamed tributary of North Creek were collected and analyzed during the Second and Third Quarters of 2021 (Table 2) (Figure 1).

- Water level measurements were conducted, consisting of: six (6) rounds of Deep Bedrock (Sugar Rock) and Intermediate Bedrock, two (2) rounds of Top-of-Rock, and two (2) rounds of Overburden (Attachment A).

- Top-of-Rock VOCs samplings and potentiometric maps continued to be monitored as part of an on-going evaluation of long-term trends (Attachment A) (Figure 8) (Figure 9).

- The unnamed tributary to North Creek continued to be sampled for VOCs on a as part of an on-going evaluation of long-term trends (Figure 1).

- Water level measurements were converted into potentiometric maps for the Site to assess the effectiveness of the groundwater migration control system (Figures 2-15).

- Monthly samples from the groundwater migration control system were collected and analyzed for compliance with the Ohio Environmental Protection Agency (Ohio EPA) National Pollutant Discharge Elimination System (NPDES) permit (No. 1IC00045*ID). Monitoring points included: Deep Bedrock and Overburden (Water Table, First Sand and Second Sand) (influent streams prior to treatment), and treated groundwater effluent. Please note Bedrock inflow (BRIN) was not sampled April-June 2021 due to pump malfunction (Attachment I) (Table 3).

- The Sugar Rock Aquifer Springs sampling event was conducted on June 22, 2021. Spring locations vary at each sampling event based on the status of the seeps, flowing or dry (Figure 21) (Table 6).

- 9-month frequency groundwater samples, in accordance with the Long-Term Monitoring Plan, were obtained from monitoring wells in the Deep Bedrock, Middle Brassfield, Top-of-Rock, and Overburden zones on May 24, 2021. MW-742 was sampled in place of MW-741 due to inaccessibility. MW-423s was sampled in place of MW-425s, which CEED believes is currently covered. (Figures 16-20) (Table 5).

- The activity of the temporary tenants, Dayton Phoenix Group (DPG) continued to be monitored. DPG is in the final stages of moving out.

- Site activities performed by CEED Personnel continued to be documented (Attachment C).

- Weekly, Monthly, and Quarterly inspections of the Site were completed (Attachment D).

- Sampled a private potable water well located at 10440 Cassel Rd. on April 23, 2021. The sample results were non-detect for all constituents of concern. Results were reported to the property owner (Attachment I).

- Continued to operate the groundwater migration control system Second and Third Quarters of 2021. Discharge Reports, Inspection Checklists, and Shutdown reports are in attachments B, D, and E respectively. The groundwater migration control system was operational 99.45% of the reporting period.

- The Sub-Slab Depressurization System (SSDS) continued to be monitored (Table 4). The system was constructed by the Environmental Doctor Co. using the construction plans developed by Tetra Tech with modifications suggested by the USEPA.
    - SSDS #2 was reported down on April 6, 2021. The fan was replaced and operation continued on May 11, 2021.
    - SSDS #10 was reported down on June 4, 2021. The fan was replaced and operation continued on August 6, 2021.

- DNAPL recovery wells were inspected for the presence of DNAPL in both Second and Third Quarters of 2021. Based on bailer inspections, no wells contained visible DNAPL during these two quarters (Attachment J).

- Use of the EOS Research Ltd. (EOS) ProControl Unit and the EOS cellular data modem kit in the groundwater migration control system building continued (installed in November 2017). Some flow data retrieval issues occurred due to cellular/technical issues with the ProControl system. Flow data was estimated during the times the technical issues occurred. To prevent data interruptions in the future, CEED plans to replace the modem.

- On April 15, 2021 CEED regained access to MW-450D. This well was covered with dirt and agricultural debris as it is located alongside an active agricultural field. CEED removed the debris and put well markers in place as an attempt to avoid this issue in the future.

- CEED determined MW-444D is no longer artesian on May 27, 2021 and have since been collecting water level measurements from the well

- CEED obtained GPS data for all accessible Monitoring Wells to improve the accuracy of the maps and figures. This GPS survey was performed May 26-28, 2021.

- On June 10, 2021 CEED implemented the quarterly indoor air proposal for Quarter 2, 2021 and sampled indoor air from eight (8) locations inside the building and two (2) ambient air locations surrounding the building. These results are included in Attachment I. Detailed results and explanation of the indoor air sampling will be provided in a separate report.

- Replacement of the bedrock pump occurred on June 14, 2021 after pump cessation in February of 2021. Operations continued on June 15, 2021.

- CERTA installed two industrial overhead fans in Building 48 in June 2021.

- Inspection of PCB containing transformers on the roof was conducted on July 1, 2021. No leaks were observed (Attachment G).

Data Collected

- Analytical results of VOCs in surface water samples collected at the unnamed tributary to North Creek are provided in Table 2 and Figure 1.
- Analytical results of VOCs from the Sugar Rock Aquifer Springs are provided in Table 6 and Figure 21.
- Analytical results of VOCs in monitoring well samples are provided in Table 5 and Figures 16-20.
- Analytical results for monthly groundwater migration control system samples are presented in Table 3.
- Attachment I contains all laboratory reports from Q2 and Q3, 2021 that were used in the development of this report. CEED believes providing the entirety of the lab reports to USEPA shows a better analysis of data validation, usability, and accountability than just providing an interpretation of data. CEED has additionally provided a unique Data Usability Analysis provided in Attachment H.
- Indoor and ambient air sampling results are provided in Attachment I. A detailed report describing the findings of the air sampling will be provided separately.

Performance Evaluation and Problems Encountered

- The groundwater migration control system was operational for approximately 99.45% of Q2 and Q3 2021. System downtime was entirely related to maintenance issues including (Attachment E):
  - troubleshooting of system components;
  - routine GAC pump system resets after precipitation events;
  - routine changes of the sock filters to remove sediment from the system;
  - Bedrock Pump Replacement
- The Bedrock pump ceased operation on February 19, 2021. CEED had a new pump installed on June 14, 2021.
- On June 14, 2021 after the new Bedrock pump was installed, a leak in the hose transporting water from the well to the remediation system was observed. This hose was replaced and upgraded on June 15, 2021 with a 200 PSI rated hose.
- Other than the maintenance outages noted above, the system has performed exceptionally through the time of publishing of this report.
- As CEED stated in the April 2021 Semi-Annual Report and in the 2019 Three Year Technical Review Report, levels of measurable VOCs in groundwater samples taken during the last three years remain higher than they might be if a much more aggressive groundwater remediation program was

conducted. A proposal for a pilot study of a more aggressive remediation technique was submitted to USEPA on July 14, 2021.

- CEED continued to monitor the fouling of components of the groundwater migration control system. Resolving the fouling issue is an ongoing effort and an update will be provided in the next semi-annual report.

Project Schedule

A project schedule is included in Attachment F.

If you have any questions or require additional information, please contact me at 513-659-8453.

Sincerely,

Kris Bamberger
Principal
CERTA Vandalia LLC
kbamberger@fuse.net

TABLE OF CONTENTS

Tables

Figures

Attachments

Center for Ecolonomic Excellence & Development

TABLES

Center for Ecolonomic Excellence & Development

October 15, 2021

TABLE 1
2021-2022 SCHEDULE FOR WATER SAMPLING/ WATER LEVEL MEASUREMENTS
CERTA VANDALIA LLC - VANDALIA, OHIO

Well ID	Unit	Frequency	Q4-2021	Q1-2022	Q2-2022	Q3-2022
CSX-18D	SR	15 months			X	
MW-402D	SR	15 months			X	
MW-411D	SR	15 months			X	
MW-412D	SR	15 months			X	
MW-413D	SR	9 months		X		
MW-416D	SR	9 months		X		
MW-417D	SR	9 months		X		
MW-418D	SR	9 months		X		
MW-420M	MB	9 months		X		
MW-420D	SR	9 months		X		
MW-424D	SR	15 months			X	
MW-434D	SR	15 months			X	
MW-435D	SR	15 months			X	
MW-444D	SR	15 months			X	
MW-453D	SR	15 months			X	
MW-301S	TOR	15 months			X	
MW-415S	TOR	15 months			X	
MW-425S	TOR	9 Months		X		
MW-426S	TOR	15 months			X	
MW-445S	TOR	15 months			X	
MW-446S	TOR	15 months			X	
MW-784	WT	15 months			X	
MW-806	WT	9 Months		X		
MW-810	WT	9 months		X		
MW-607	WT/S1	9 months		X		
MW-729	WT/S1	15 months			X	
MW-734	WT/S1	15 months			X	
MW-775	WT/S1	9 Months		X		
MW-793	WT/S1	15 months			X	
MW-796	WT/S1	15 months			X	
MW-776	WT/S1	9 months		X		
VPW-103	WT/S1	15 months			X	
MW-730	S1	9 Months		X		
MW-732	S1	9 months		X		
MW-809	S1/S2	15 months			X	
MW-787	WT	15 months			X	
MW-715	S1	15 months			X	
MW-515	S2	15 months			X	
MW-605	S2	9 months		X		
MW-717	S2	9 months		X		
MW-725	S2	9 months		X		
MW-731	S2	9 months		X		
MW-740	S2	9 months		X		
MW-741	S2	9 months		X		
MW-742	S2	15 months			X	
MW-743	S2	9 months		X		
MW-746	S2	15 months			X	
MW-759	S2	9 months		X		
MW-800	S2	9 months		X		
MW-807	S2	15 months			X	
SW-1 North Creek	North Creek	Quarterly	x	X	X	x
SW-4 North Creek	North Creek	Quarterly	x	X	X	x
B005	SR Spring	9 months		X		

WATER LEVEL MEASUREMENTS	
Unit	**Frequency**
All SR/MD Wells	Monthly
All TOR Wells	Quarterly
All Overburden Wells	Quarterly

UNIT KEY	
Unit	**Description**
WT	Water Table
S1	First Sand
S2	Second Sand
TOR	Top of Rock
MB	Middle Brassfield
SR	Sugar Rock

B006	SR Spring	9 months		X		
C001	SR Spring	9 months		X		
D001	SR Spring	9 months		X		
E001	SR Spring	9 months		X		
E002	SR Spring	9 months		X		
F001	SR Spring	9 months		X		
G004	SR Spring	9 months		X		
G006	SR Spring	9 months		X		

TABLE 2: SECOND AND THIRD QUARTER 2021 SURFACE WATER SAMPLES SHOWING DETECTABLE VOC LEVELS

TABLE 2
SECOND & THIRD QUARTERS 2021
SURFACE WATER SAMPLES SHOWING DETECTABLE VOC LEVELS
CERTA VANDALIA LLC
VANDALIA, OH

Location Group	North Creek	North Creek	North Creek	North Creek
Location	SW-1	SW-4	SW-1	SW-4
Sample Date	4/6/2021	4/6/2021	7/1/2021	7/1/2021
Sample Type	N	N	N	N
Volatile Organic Compounds (ug/L)				
1,1-Dichloroethane	<1.00	<10.0	<1.00	<10.0
Trichloroethene	**1.42**	**140**	**6.15**	**97.4**
Vinyl chloride	<1.00	<10.0	<1.00	<10.0
1,1,1-Trichloroethane	<1.00	**10**	<1.00	<10.0
cis-1,2-Dichloroethene	**1.45**	**78.1**	**3.09**	**50.6**

Notes And Abbreviations:

1. Analysis method SW8260
2. <: Result is below the indicated reporting limit.
3. "-" indicated no data was available for this parameter.
4. J: Estimated result.
5. Sample type codes: N - Normal, FD - Field Duplicate
6. See Figure 1 for sample location.

TABLE 3: SECOND AND THIRD QUARTER 2021 PERFORMANCE MONITORING ANALYTICAL DATA

TABLE 3
SECOND & THIRD QUARTERS 2021
PERFORMANCE MONITORING ANALYTICAL DATA
GROUNDWATER MIGRATION CONTROL SYSTEM
CERTA VANDALIA LLC
VANDALIA, OH

Location	OBIN	SSIN	BRIN	PREAS	EFF
Sample Date	4/6/2021	4/6/21	NA	4/6/2021	4/6/2021
Unit	Overburden	Second Sand	Bedrock	Pre-Air Stripper	Effluent
Volatile Organic Compounds (ug/L)					
1,1-Dichloroethane	<200	**382**	NA	<200	<1.00
Trichloroethene	**12300**	**9410**	NA	**10500**	<1.00
1,1,1-Trichloroethane	**473**	<200	NA	**258**	<1.00
cis-1,2-Dichloroethene	**1540**	**3800**	NA	**2200**	<0.500
Test Method: pH Test Strips pH Field Tested S.U. (Standard Units)					7.3

Notes And Abbreviations:

1. Analysis method EPA 624.
2. <: Result is below the indicated reporting limit.
3. "-" indicates no data was available for this parameter.
4. Lab Qualifiers: HF- Field Parameter with a holding time of less than 15 minutes.
5. Results in bold are detected.
6. BRIN not sampled due to pump not functioning.

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TABLE 3
SECOND & THIRD QUARTERS 2021
PERFORMANCE MONITORING ANALYTICAL DATA
GROUNDWATER MIGRATION CONTROL SYSTEM
CERTA VANDALIA LLC
VANDALIA, OH

Location	OBIN	SSIN	BRIN	PREAS	EFF
Sample Date	5/11/2021	5/11/2021	NA	5/11/2021	5/11/2021
Unit	Overburden	Second Sand	Bedrock	Pre-Air Stripper	Effluent
Volatile Organic Compounds (ug/L)					
1,1-Dichloroethane	<200	<200	NA	<200	<1.00
Trichloroethene	**6900**	**7210**	NA	**6850**	<1.00
1,1,1-Trichloroethane	**268**	**279**	NA	**274**	<1.00
cis-1,2-Dichloroethene	**759**	**721**	NA	**669**	<0.500
Test Method: pH Test Strips pH Field Tested S.U. (Standard Units)					7.2

Notes And Abbreviations:

1. Analysis method EPA 624.
2. <: Result is below the indicated reporting limit.
3. "-" indicates no data was available for this parameter.
4. Lab Qualifiers: HF- Field Parameter with a holding time of less than 15 minutes.
5. Results in bold are detected.
6. BRIN not sampled due to pump not functioning.

TABLE 3
SECOND & THIRD QUARTERS 2021
PERFORMANCE MONITORING ANALYTICAL DATA
GROUNDWATER MIGRATION CONTROL SYSTEM
CERTA VANDALIA LLC
VANDALIA, OH

Location	OBIN	SSIN	BRIN	PREAS	EFF
Sample Date	6/10/2021	6/10/2021	NA	6/10/2021	6/10/2021
Unit	Overburden	Second Sand	Bedrock	Pre-Air Stripper	Effluent
Volatile Organic Compounds (ug/L)					
1,1-Dichloroethane	<200	**260**	NA	<200	<1.00
Trichloroethene	**6850**	**10700**	NA	**7630**	<1.00
1,1,1-Trichloroethane	<200	<200	NA	<200	<1.00
cis-1,2-Dichloroethene	**983**	**4220**	NA	**1470**	<0.500
Test Method: pH Test Strips pH Field Tested S.U. (Standard Units)					7.2

Notes And Abbreviations:

1. Analysis method EPA 624.
2. <: Result is below the indicated reporting limit.
3. "-" indicates no data was available for this parameter.
4. Lab Qualifiers: HF- Field Parameter with a holding time of less than 15 minutes.
5. Results in bold are detected.

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TABLE 3
SECOND & THIRD QUARTERS 2021
PERFORMANCE MONITORING ANALYTICAL DATA
GROUNDWATER MIGRATION CONTROL SYSTEM
CERTA VANDALIA LLC
VANDALIA, OH

Location	OBIN	SSIN	BRIN	PREAS	EFF
Sample Date	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021
Unit	Overburden	Second Sand	Bedrock	Pre-Air Stripper	Effluent
Volatile Organic Compounds (ug/L)					
1,1-Dichloroethane	<200	<100	<50.0	<50.0	<1.00
Trichloroethene	**3330**	**3770**	**2320**	**2580**	**1.77**
1,1,1-Trichloroethane	<200	<100	<50.0	<50.0	<1.00
cis-1,2-Dichloroethene	**402**	**499**	**1150**	**1010**	**0.985**
Test Method: pH Test Strips					
pH Field Tested S.U. (Standard Units)					7.6

Notes And Abbreviations:

1. Analysis method EPA 624.
2. <: Result is below the indicated reporting limit.
3. "-" indicates no data was available for this parameter.
4. Lab Qualifiers: HF- Field Parameter with a holding time of less than 15 minutes.
5. Results in bold are detected.

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TABLE 3
SECOND & THIRD QUARTERS 2021
PERFORMANCE MONITORING ANALYTICAL DATA
GROUNDWATER MIGRATION CONTROL SYSTEM
CERTA VANDALIA LLC
VANDALIA, OH

Location	OBIN	SSIN	BRIN	PREAS	EFF
Sample Date	8/6/2021	8/6/2021	8/6/2021	8/6/2021	8/6/2021
Unit	Overburden	Second Sand	Bedrock	Pre-Air Stripper	Effluent
Volatile Organic Compounds (ug/L)					
1,1-Dichloroethane	<200	**361**	<50.0	<50.0	<1.00
Trichloroethene	**6460**	**10800**	**2090**	**2590**	<1.00
1,1,1-Trichloroethane	<200	<200	<50.0	<50.0	<1.00
cis-1,2-Dichloroethene	**1030**	**3990**	**921**	**1040**	**0.519**
Test Method: pH Test Strips pH Field Tested S.U. (Standard Units)					7.1

Notes And Abbreviations:

1. Analysis method EPA 624.
2. <: Result is below the indicated reporting limit.
3. "-" indicates no data was available for this parameter.
4. Lab Qualifiers: HF- Field Parameter with a holding time of less than 15 minutes.
5. Results in bold are detected.

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TABLE 3
SECOND & THIRD QUARTERS 2021
PERFORMANCE MONITORING ANALYTICAL DATA
GROUNDWATER MIGRATION CONTROL SYSTEM
CERTA VANDALIA LLC
VANDALIA, OH

Location	OBIN	SSIN	BRIN	PREAS	EFF
Sample Date	9/8/2021	9/8/2021	9/8/2021	9/8/2021	9/8/2021
Unit	Overburden	Second Sand	Bedrock	Pre-Air Stripper	Effluent
Volatile Organic Compounds (ug/L)					
1,1-Dichloroethane	<200	**206**	<50.0	<50.0	<1.00
Trichloroethene	**5500**	**11200**	**2200**	**2530**	**1.46**
1,1,1-Trichloroethane	<200	<200	<50.0	<50.0	<1.00
cis-1,2-Dichloroethene	**939**	**4420**	**948**	**967**	**1.06**
Test Method: pH Test Strips pH Field Tested S.U. (Standard Units)					7.2

Notes And Abbreviations:

1. Analysis method EPA 624.
2. <: Result is below the indicated reporting limit.
3. "-" indicates no data was available for this parameter.
4. Lab Qualifiers: HF- Field Parameter with a holding time of less than 15 minutes.
5. Results in bold are detected.

TABLE 4- PERFORMANCE MONITORING ANALYTICAL DATA SUB SLAB DEPRESSURIZATION SYSTEM OPERATION INSPECTIONS

TABLE 4
SECOND & THIRD QUARTERS 2021
SUB SLAB DEPRESSURIZATION SYSTEM OPERATION INSPECTIONS
CERTA VANDALIA LLC
VANDALIA, OH LLC

		OPERATING (YES or NO)												NOTES
DATE	PUMP	1	2	3	4	5	6	7	8	9	10	11	12	
	SSDS#	B7	C10	E3	E9	D11	G6	R5	J6	P3	C15	G14	J17	
	COLUMN	C7/8	C10	F4	E8/9	DE12	G6	T9	J7	N5	C16	F13	J6	
	CIRCUIT	10	14	16	5	20	17	11	25	6	16	8	20	
4/6/21		YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	SSDS #2 is not working.
4/12/21		YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	SSDS #2 is not working.
4/20/21		YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	SSDS #2 is not working.
4/27/21		YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	SSDS #2 is not working.
5/2/21		YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	SSDS #2 is not working.
5/11/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	SSDS #2 turned on after replacement.
5/20/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
5/24/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
6/4/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	SSDS #10 is not working.
6/10/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	SSDS #10 is not working.
6/15/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	SSDS #10 is not working.
6/23/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	SSDS #10 is not working.
7/1/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	SSDS #10 is not working.
7/7/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	SSDS #10 is not working.
7/14/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	SSDS #10 is not working.
7/19/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	SSDS #10 is not working.
7/26/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	SSDS #10 is not working.
8/6/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	SSDS #10 now working.
8/11/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
8/21/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
8/25/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
8/31/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
9/8/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
9/17/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
9/23/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
9/28/21		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	

TABLE 5- SECOND QUARTER 2021 MONITORING WELL SAMPLE RESULTS

TABLE 5
SECOND QUARTER 2021 ANALYTICAL RESULTS
MONITORING WELL SAMPLE RESULTS
CERTA VANDALIA LLC - VANDALIA, OHIO

Location	MW-413D	MW-416D	MW-417D	MW-418D	MW-420M	MW-420D	MW-423S	MW-810	MW-806
Sample Date	5/24/2021	5/24/2021	5/24/2021	5/24/2021	5/24/2021	5/24/2021	5/24/2021	5/24/2021	5/24/2021
Unit	SR	SR	SR	SR	MB	SR	TOR	WT	WT
Sample Type	N	N	N	N	N	N	N	N	N
Volatile Organic Compounds (ug/L)									
1,1,1-Trichloroethane	<83.3	<1.00	<1.67	<1.00	<25.0	<10.0	<125	<1.00	<100
1,1-Dichloroethane	**106**	<1.00	<1.67	**2.18**	<25.0	<10.0	<125	<1.00	**334**
Chloroform (Trichloromethane)	<83.3	<1.00	<1.67	<1.00	<25.0	<10.0	<125	<1.00	<100
cis-1,2-Dichloroethene	**4570**	**39.4**	**37.6**	<1.00	**498**	**491**	**439**	<1.00	**22400**
Trichloroethene	**6560**	**2.38**	<1.67	<1.00	**330**	**244**	**3400**	<1.00	**24300**
Vinyl chloride	<83.3	**13.8**	**70.5**	**7.16**	<25.0	**83.7**	<125	<1.00	<100

Notes:

1. Summary includes compounds detected in one or more samples.

2. Analysis methods 8260B.

3.See Figures 16-20 for sample locations.

4. < : Result is below the indicated reporting limit.

5. J : Estimated result.

6. Sample type codes: N - Normal FD - Field Duplicate.

Center for Ecolonomic Excellence & Development

TABLE 5
SECOND QUARTER 2021 ANALYTICAL RESULTS
MONITORING WELL SAMPLE RESULTS
CERTA VANDALIA LLC - VANDALIA, OHIO

Location	MW-607	MW-775	MW-776	MW-730	MW-732	MW-605	MW-717	MW-725	MW-731
Sample Date	5/24/2021	5/24/2021	5/24/2021	5/24/2021	5/24/2021	5/24/2021	5/24/2021	5/24/2021	5/24/2021
Unit	WT/S1	WT	WT/S1	S1	S1	S1	S2	S2	S2
Sample Type	N	N	N	N	N	N	N	N	N
Volatile Organic Compounds (ug/L)									
1,1,1-Trichloroethane	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1,1-Dichloroethane	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Chloroform (Trichloromethane)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
cis-1,2-Dichloroethene	<1.00	<1.00	<1.00	**2.75**	<1.00	<1.00	<1.00	<1.00	<1.00
Trichloroethene	**12.3**	<1.00	<1.00	**2.20**	<1.00	<1.00	<1.00	<1.00	<1.00
Vinyl chloride	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00

Notes:

1. Summary includes compounds detected in one or more samples.

2. Analysis methods 8260B.

3.See Figures 16-20 for sample locations.

4. < : Result is below the indicated reporting limit.

5. J : Estimated result.

6. Sample type codes: N - Normal FD - Field Duplicate.

TABLE 5
SECOND QUARTER 2021 ANALYTICAL RESULTS
MONITORING WELL SAMPLE RESULTS
CERTA VANDALIA LLC - VANDALIA, OHIO

Location	MW-740	MW-742	MW-743	MW-759	MW-800	MW-743
Sample Date	5/24/2021	5/24/2021	5/24/2021	5/24/2021	5/24/2021	5/24/2021
Unit	S2	S2	S2	S2	S2	S2
Sample Type	N	N	N	N	N	FD
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1,1-Dichloroethane	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Chloroform (Trichloromethane)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
cis-1,2-Dichloroethene	<1.00	**2.58**	<1.00	**101**	<1.00	<1.00
Trichloroethene	<1.00	**4.04**	<1.00	**16.1**	<1.00	<1.00
Vinyl chloride	<1.00	**5.99**	<1.00	**50.1**	<1.00	<1.00

Notes:

1. Summary includes compounds detected in one or more samples.
2. Analysis methods 8260B.
3. See Figures 16-20 for sample locations.
4. < : Result is below the indicated reporting limit.
5. J : Estimated result.
6. Sample type codes: N - Normal FD - Field Duplicate.

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TABLE 6- SECOND QUARTER 2021 SPRING SAMPLE RESULTS

TABLE 6

SECOND QUARTER 2021 ANALYTICAL RESULTS

SPRING SAMPLE RESULTS

CERTA VANDALIA LLC - VANDALIA, OHIO

Location Group	Springs	Springs	Springs	Springs	Springs	Springs	Springs	Springs	Springs	Springs
Location	B005	B006	C001	D001	E001	E004	F001	G003	G005	B004
Sample Date	6/22/2021	6/22/2021	6/22/2021	6/22/2021	6/22/2021	6/22/2021	6/22/2021	6/22/2021	6/22/2021	6/22/2021
Sample Type	N	N	N	N	N	N	N	N	N	N
Volatile Organic Compounds (ug/L)										
1,1,1-Trichloroethane	<1.00	<1.00	<1.00	<2.50	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1,1-Dichloroethane	<1.00	<1.00	<1.00	<2.50	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Chloroform (Trichloromethane)	<1.00	<1.00	<1.00	<2.50	<1.00	<1.00	**7.28**	<1.00	<1.00	<1.00
cis-1,2-Dichloroethene	<1.00	<1.00	**9.21**	<2.50	**3.14**	<1.00	<1.00	<1.00	<1.00	<1.00
Trichloroethene	<1.00	<1.00	**26.2**	**53.1**	**12.7**	<1.00	<1.00	<1.00	**1.20**	<1.00
Vinyl chloride	<1.00	<1.00	<1.00	<2.50	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00

Notes:

1. Summary includes compounds detected in one or more samples.
2. Analysis methods 8260B.
3. See Figure 21 for sample locations.
4. < : Result is below the indicated reporting limit.
5. J : Estimated result.
6. Sample type codes: N - Normal FD - Field Duplicate.
7. G004, G006, and E002 not sampled due to dry spring.

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FIGURES

FIGURE 1: PERFORMANCE MONITORING ANALYTICAL DATA SURFACE WATER SAMPLING LOCATIONS ON THE UNNAMED TRIBUTARY TO NORTH CREEK AND VOC RESULTS

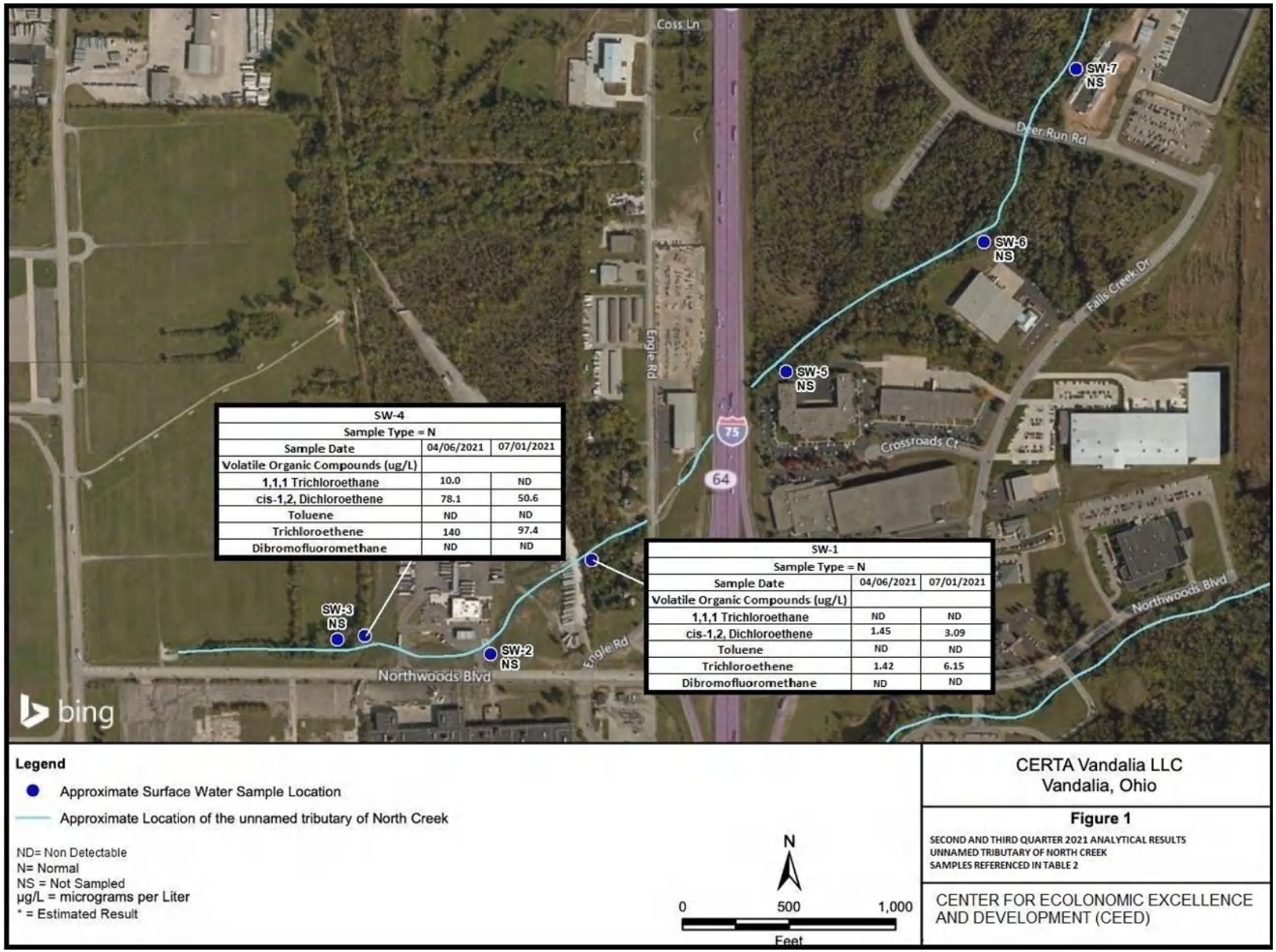

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FIGURE 2: POTENTIOMETRIC SURFACE CONTOURS, SHALLOW WATER TABLE ZONE, APRIL 2021

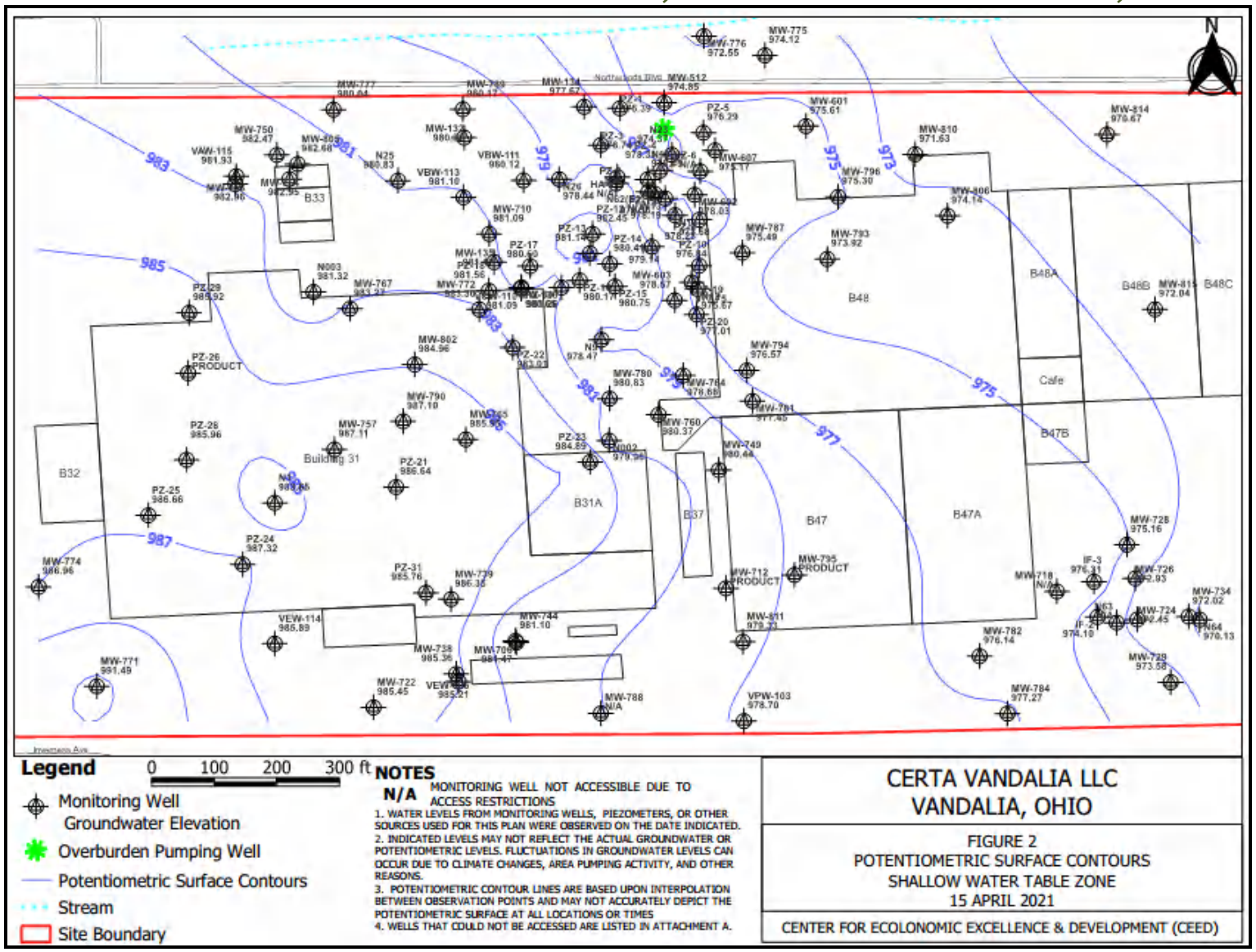

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FIGURE 3: POTENTIOMETRIC SURFACE CONTOURS, SHALLOW WATER TABLE ZONE, JULY 2021

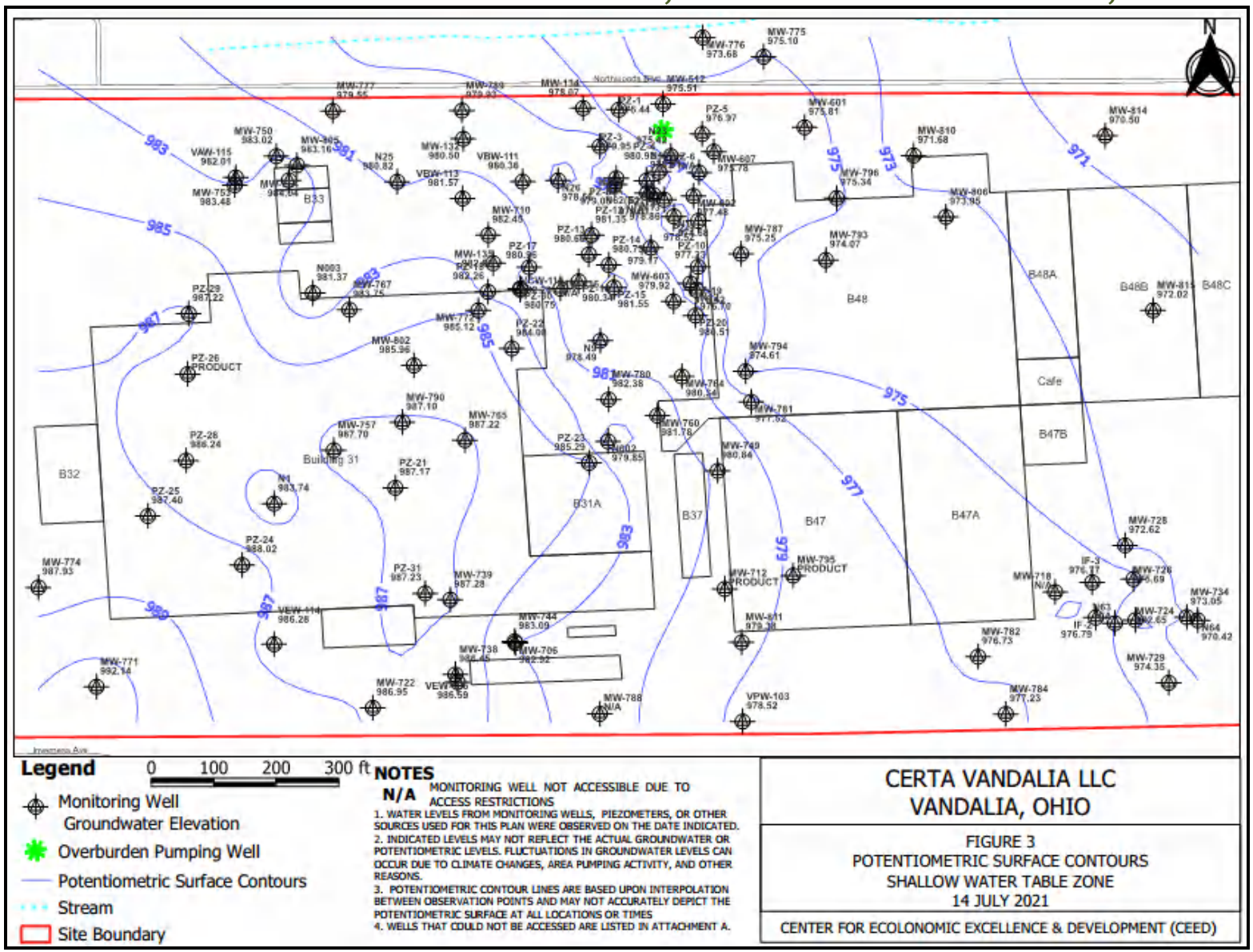

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FIGURE 4: POTENTIOMETRIC SURFACE CONTOURS, FIRST SAND ZONE, APRIL 2021

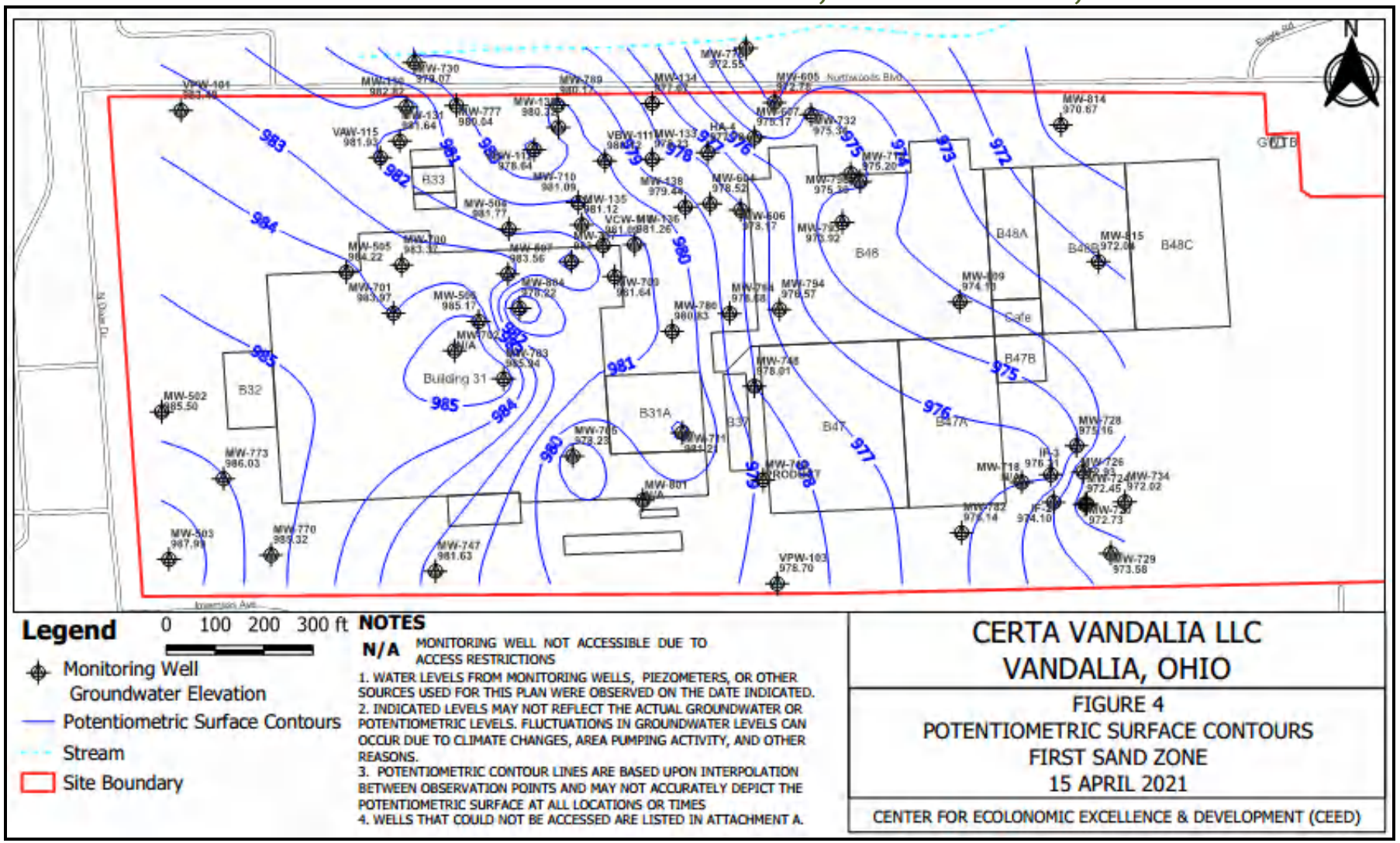

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FIGURE 5: POTENTIOMETRIC SURFACE CONTOURS, FIRST SAND ZONE, JULY 2021

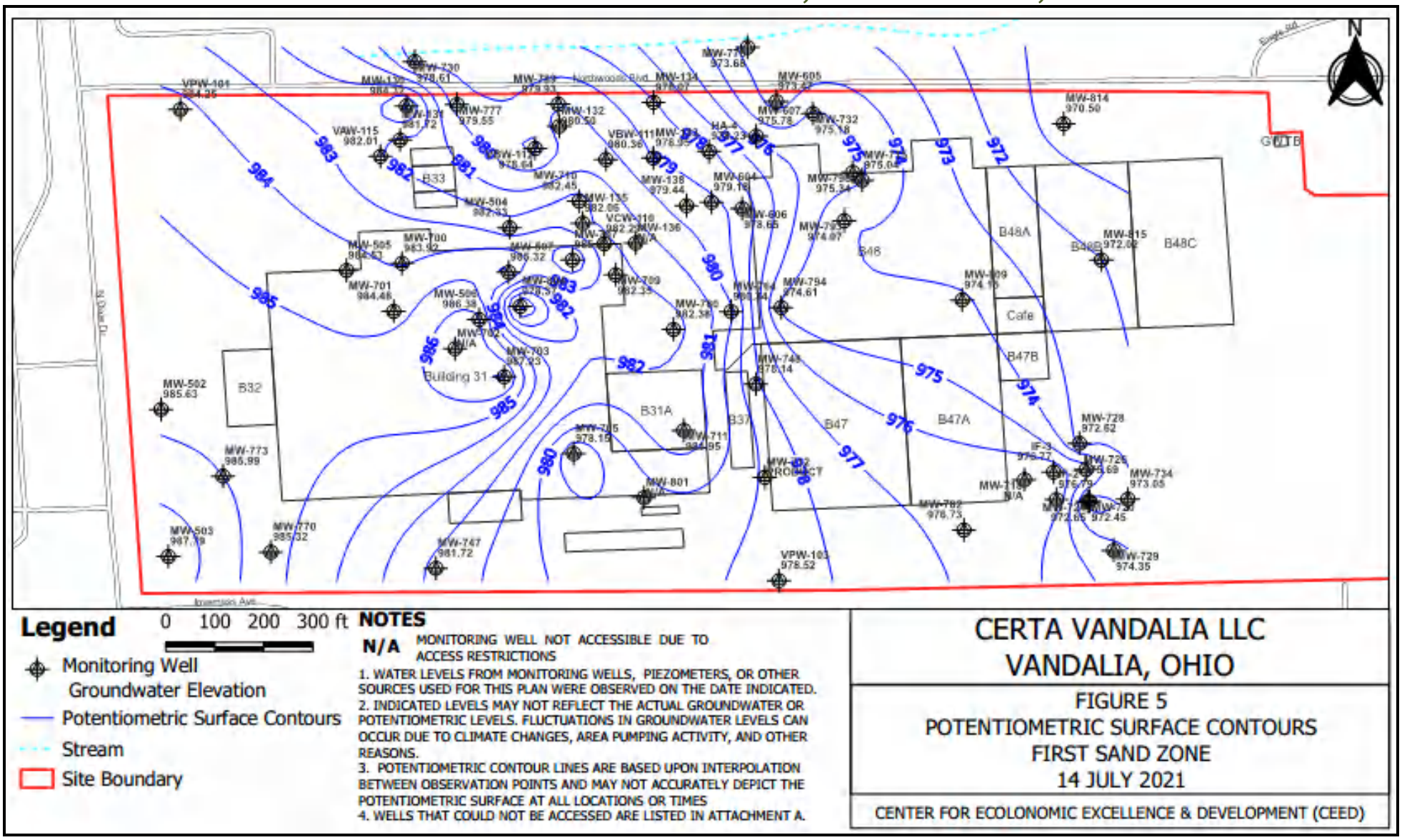

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FIGURE 6: POTENTIOMETRIC SURFACE CONTOURS, SECOND SAND ZONE, APRIL 2021

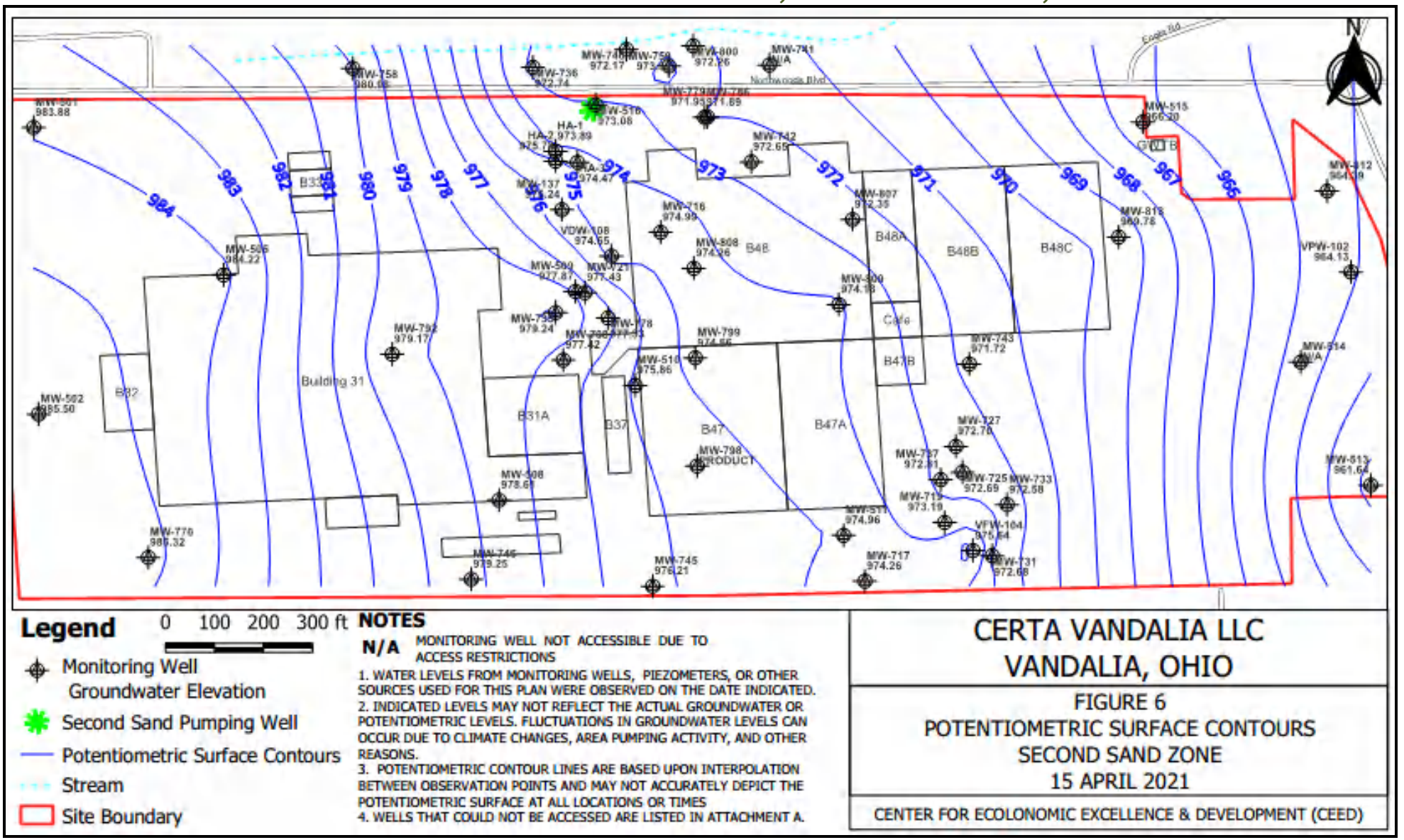

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FIGURE 7: POTENTIOMETRIC SURFACE CONTOURS, SECOND SAND ZONE, JULY 2021

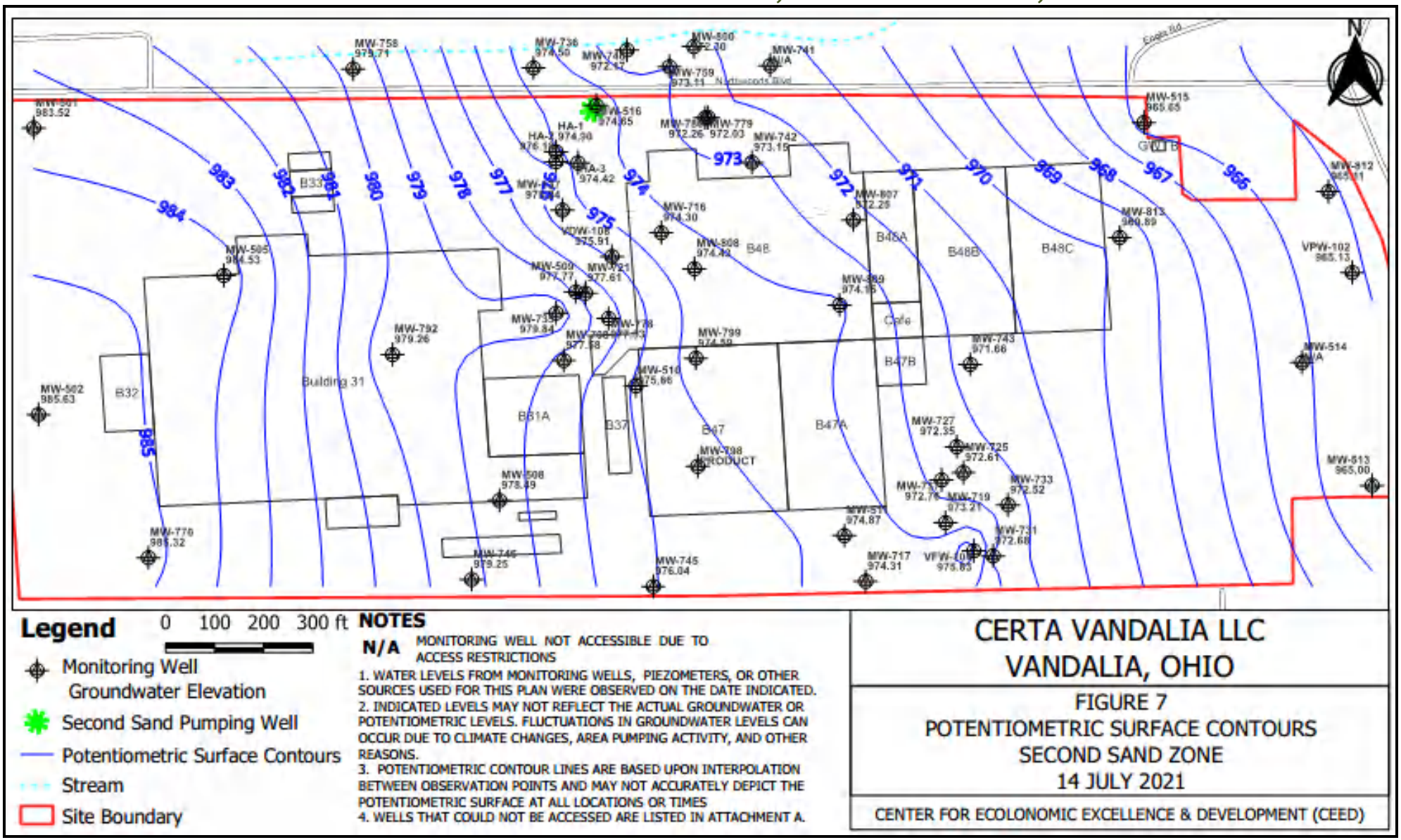

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FIGURE 8: POTENTIOMETRIC SURFACE CONTOURS, TOP OF BEDROCK, APRIL 2021

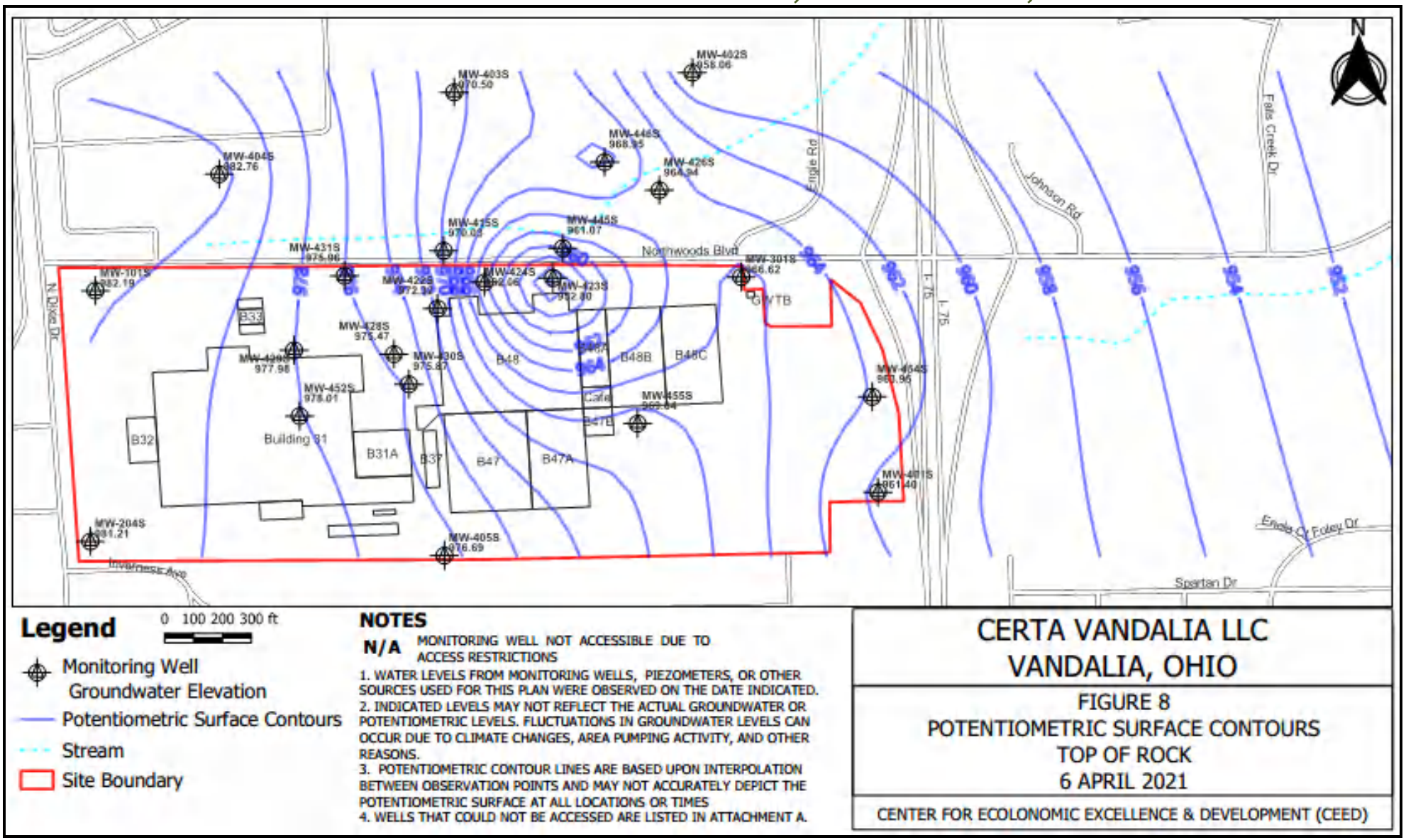

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FIGURE 9: POTENTIOMETRIC SURFACE CONTOURS, TOP OF BEDROCK, JULY 2021

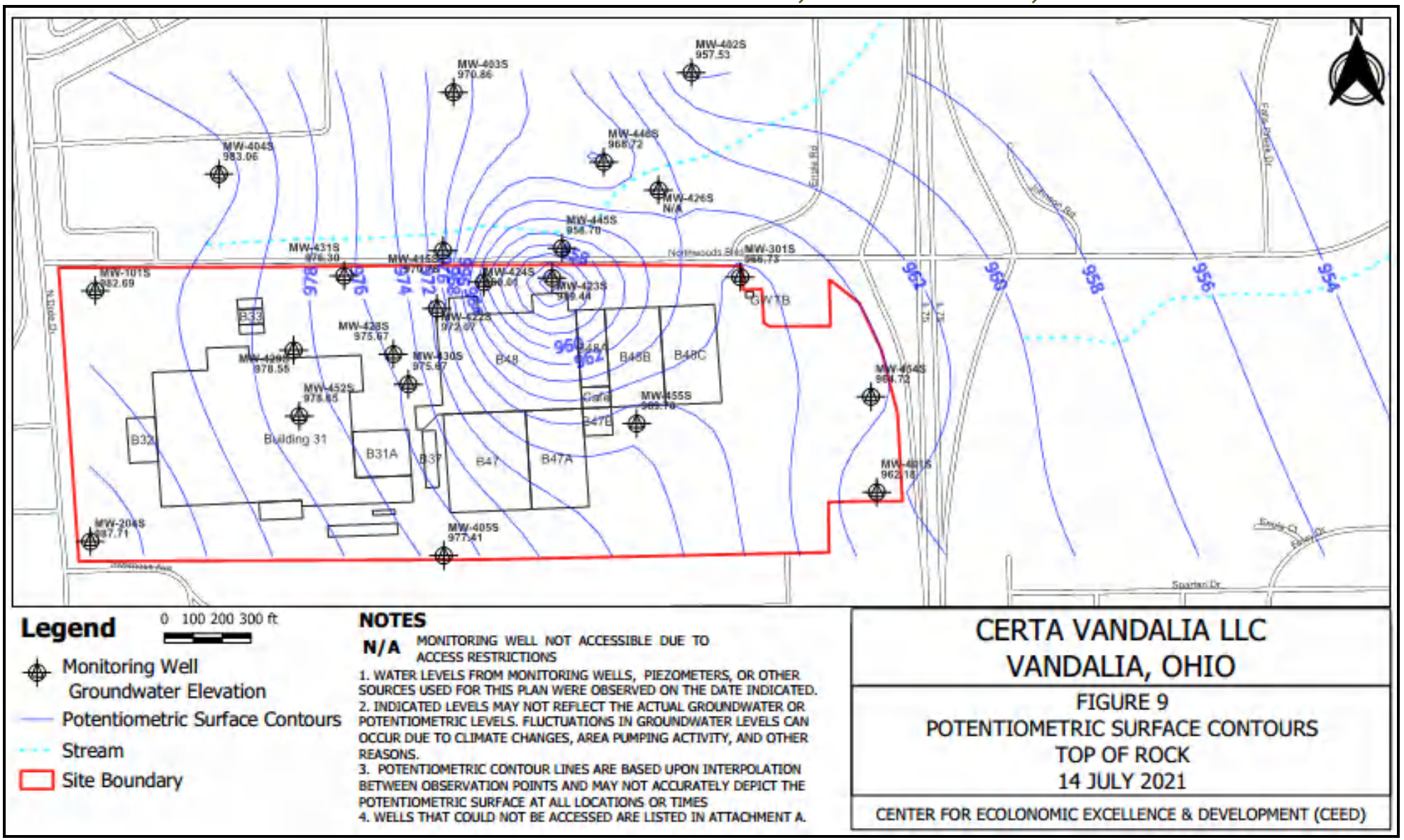

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FIGURE 10: POTENTIOMETRIC SURFACE CONTOURS, DEEP BEDROCK, APRIL 2021

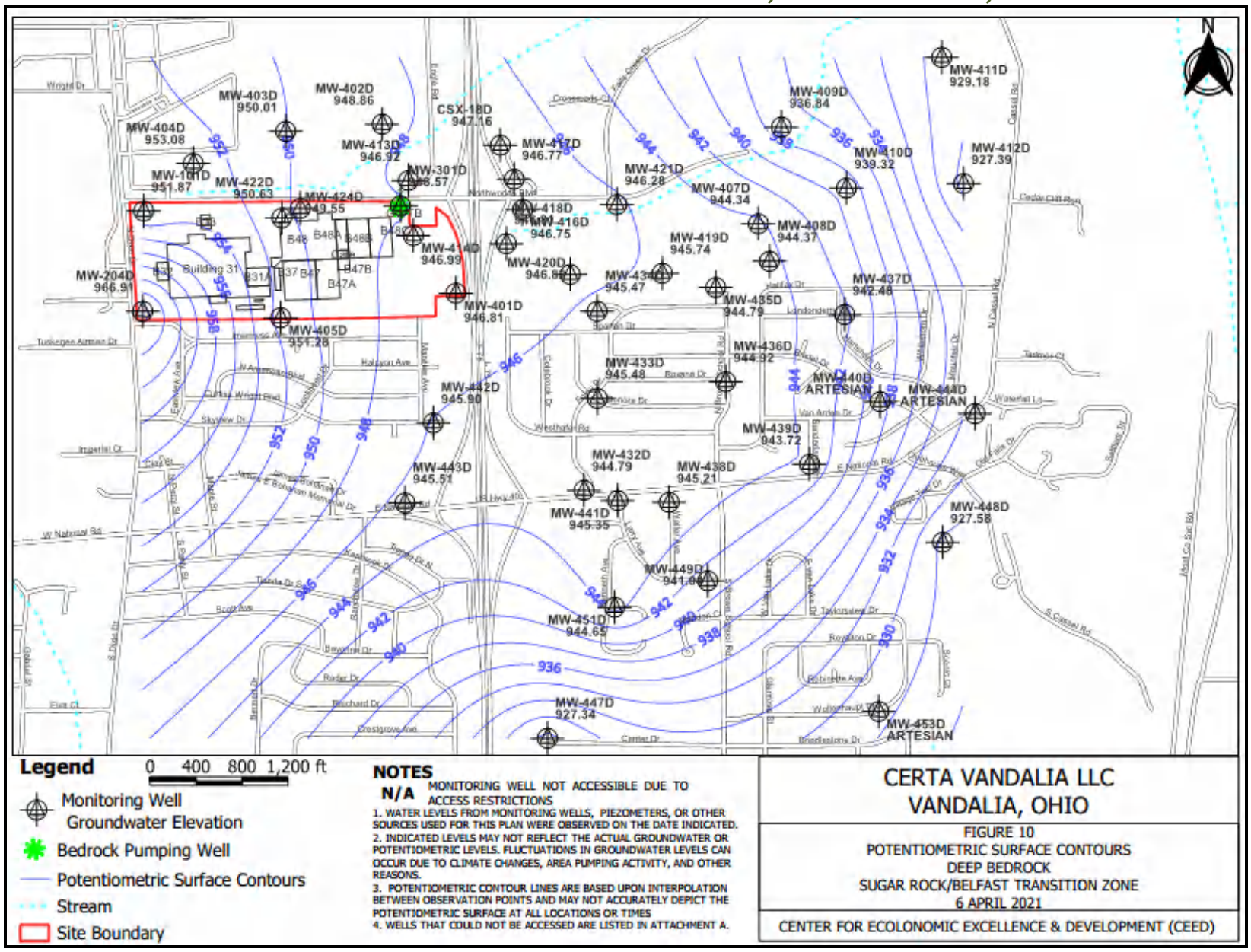

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FIGURE 11: POTENTIOMETRIC SURFACE CONTOURS, DEEP BEDROCK, MAY 2021

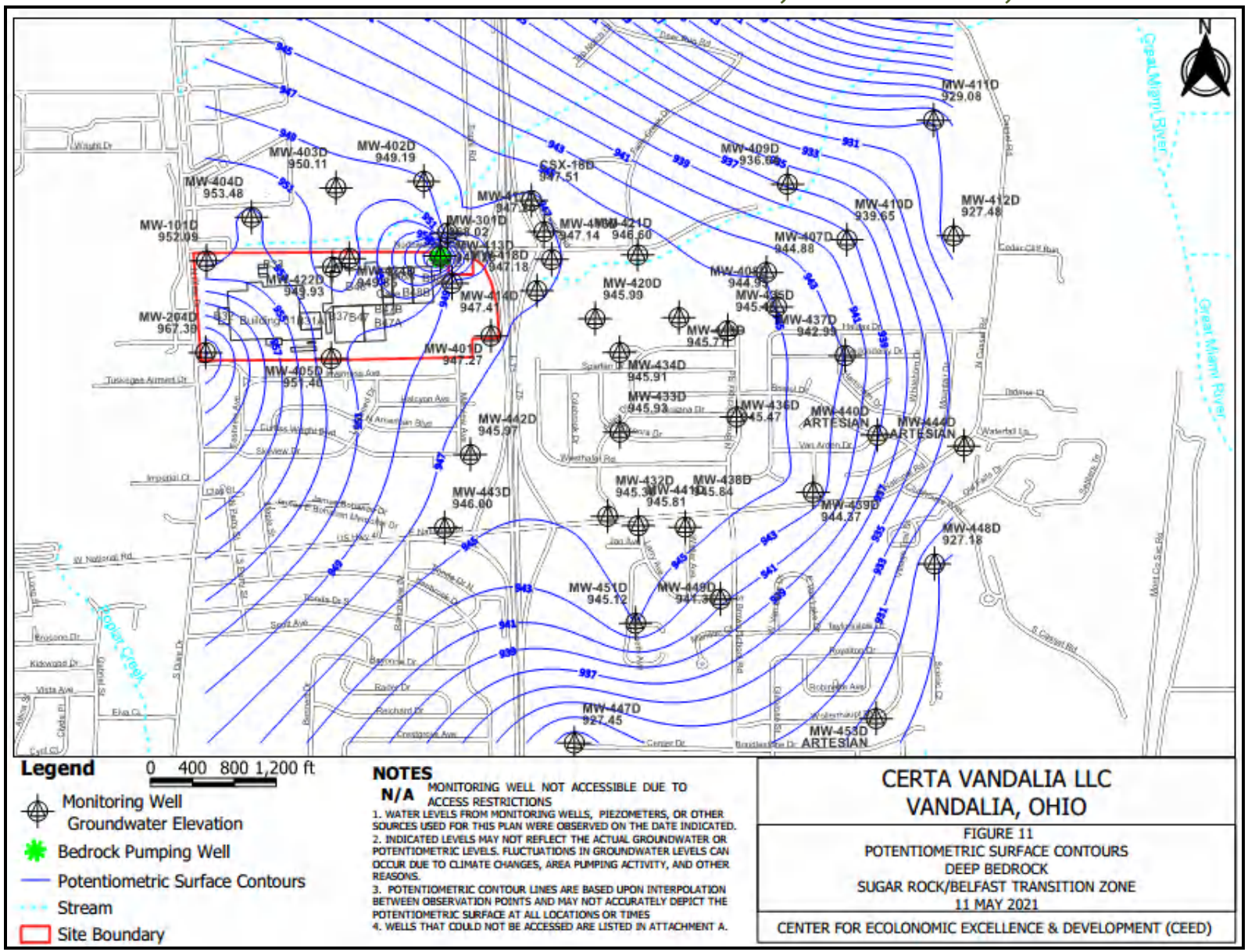

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FIGURE 12: POTENTIOMETRIC SURFACE CONTOURS, DEEP BEDROCK, JUNE 2021

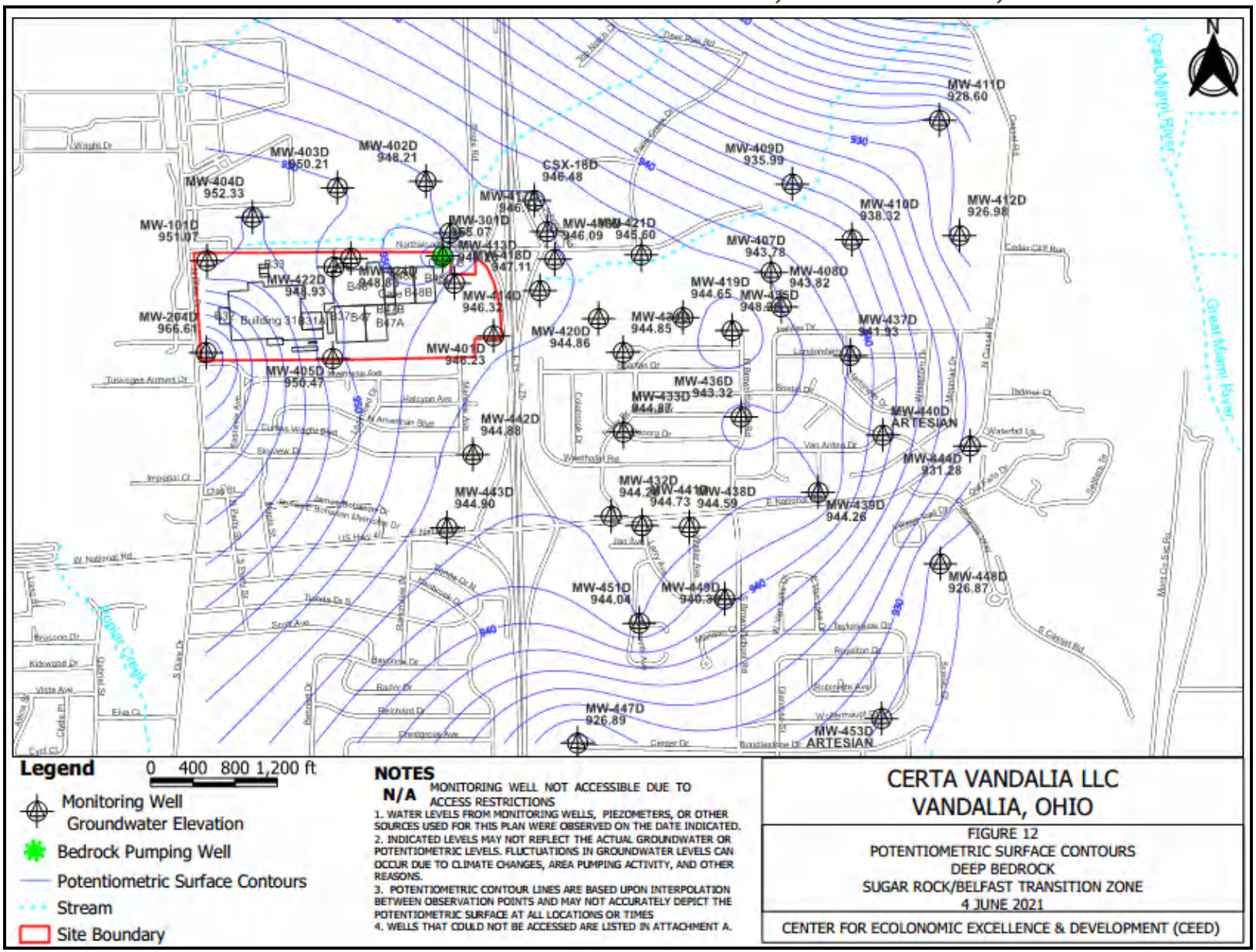

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FIGURE 13: POTENTIOMETRIC SURFACE CONTOURS, DEEP BEDROCK, JULY 2021

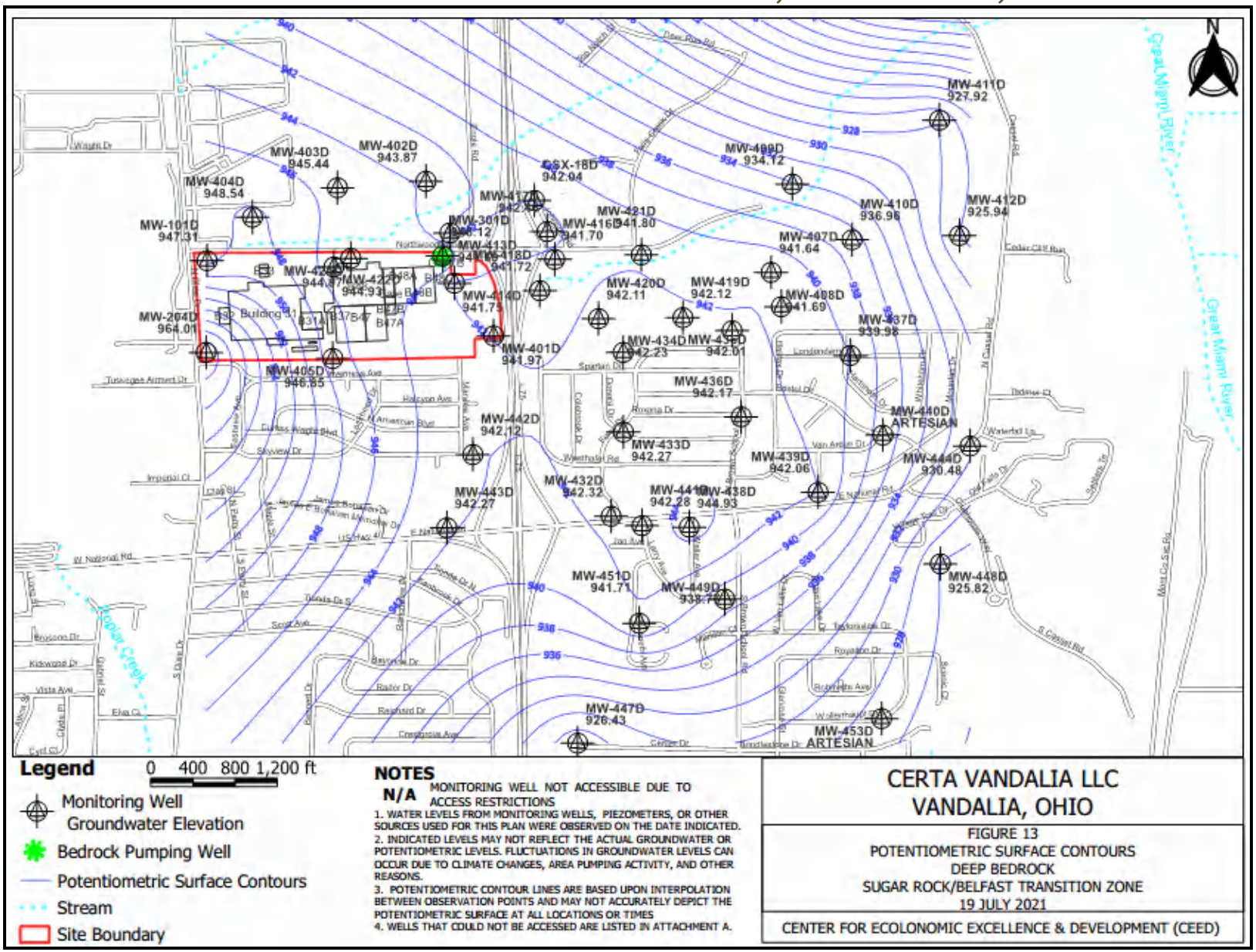

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FIGURE 14: POTENTIOMETRIC SURFACE CONTOURS, DEEP BEDROCK, AUGUST 2021

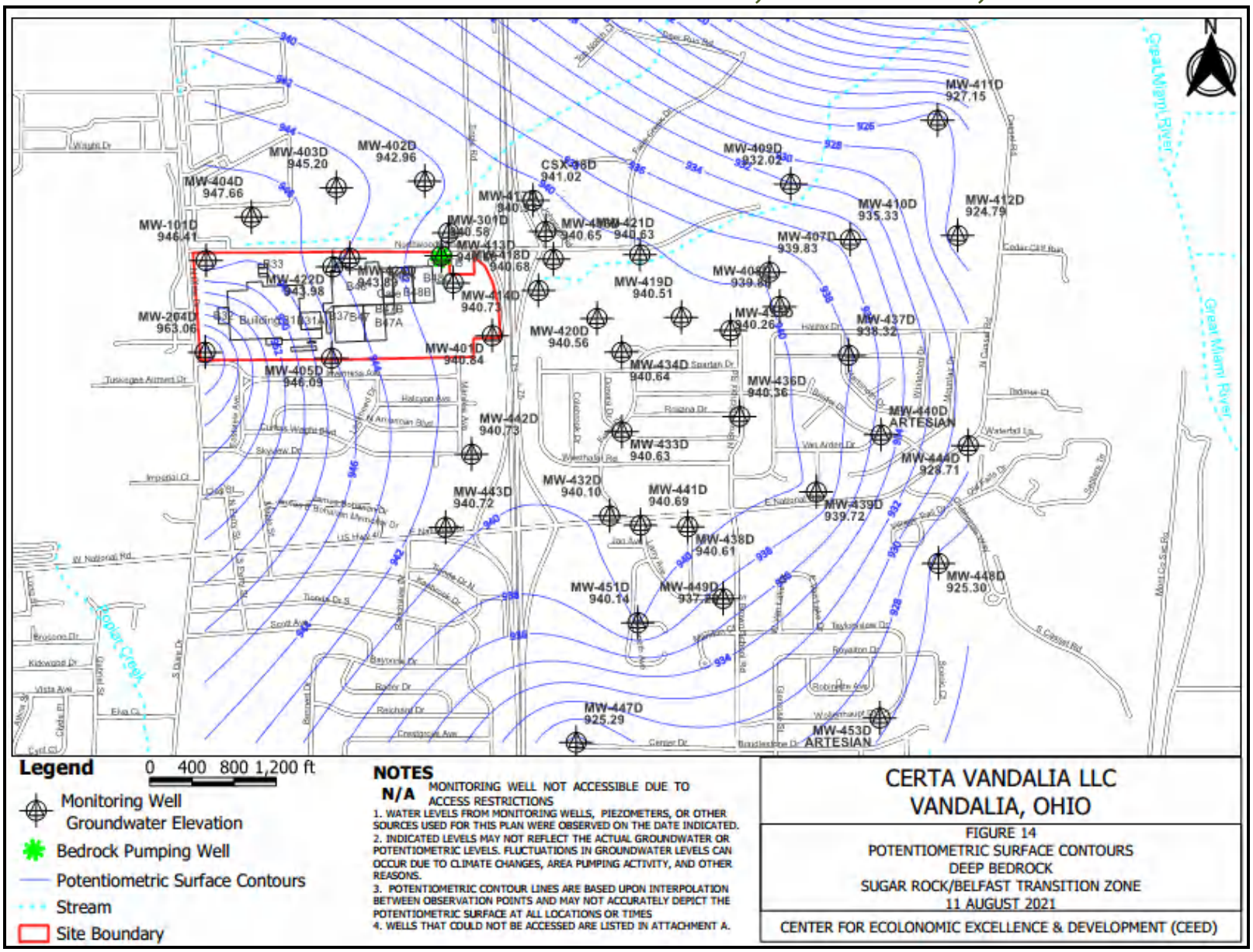

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FIGURE 15: POTENTIOMETRIC SURFACE CONTOURS, DEEP BEDROCK, SEPTEMBER 2021

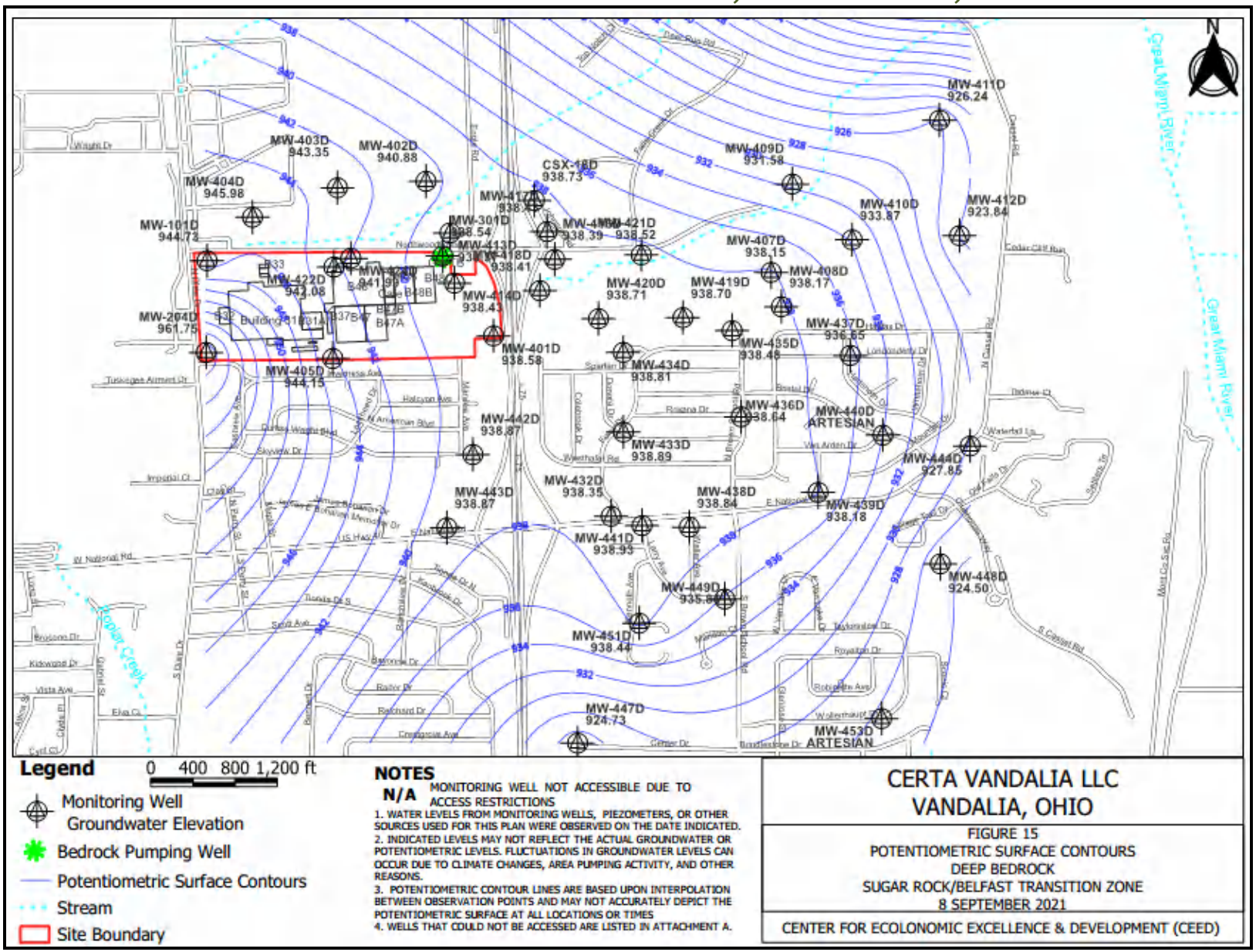


FIGURE 16: SECOND QUARTER 2021 GROUNDWATER WELL SAMPLING - SUGAR ROCK & MIDDLE BRASSFIELD WELLS AND VOC RESULTS (MAY 2021)

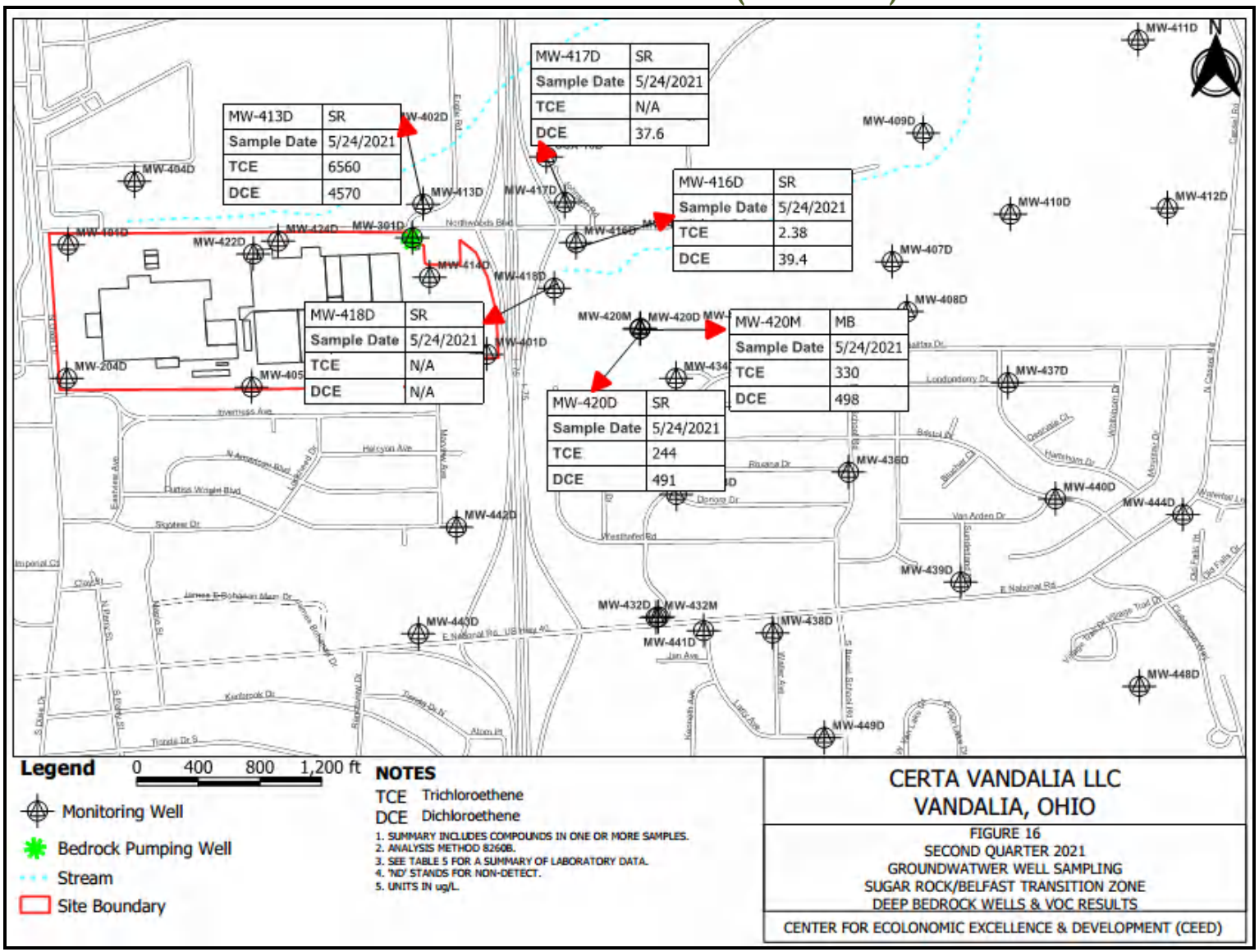


FIGURE 17: SECOND QUARTER 2021 GROUNDWATER WELL SAMPLING - TOP OF ROCK WELLS AND VOC RESULTS (MAY 2021)

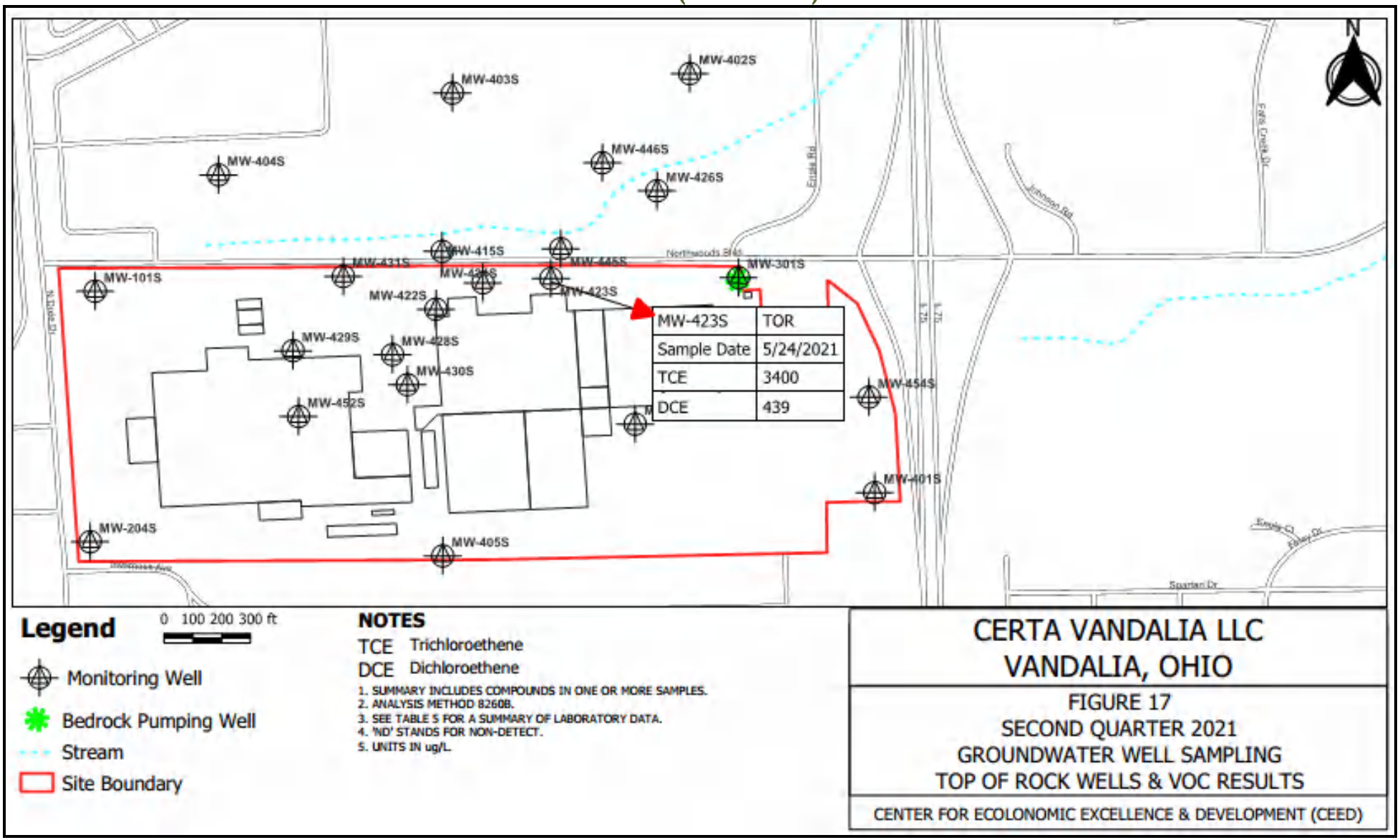


FIGURE 18: SECOND QUARTRER 2021 GROUNDWATER WELL SAMPLING- SHALLOW WATER TABLE WELLS AND VOC RESULTS (MAY 2021)

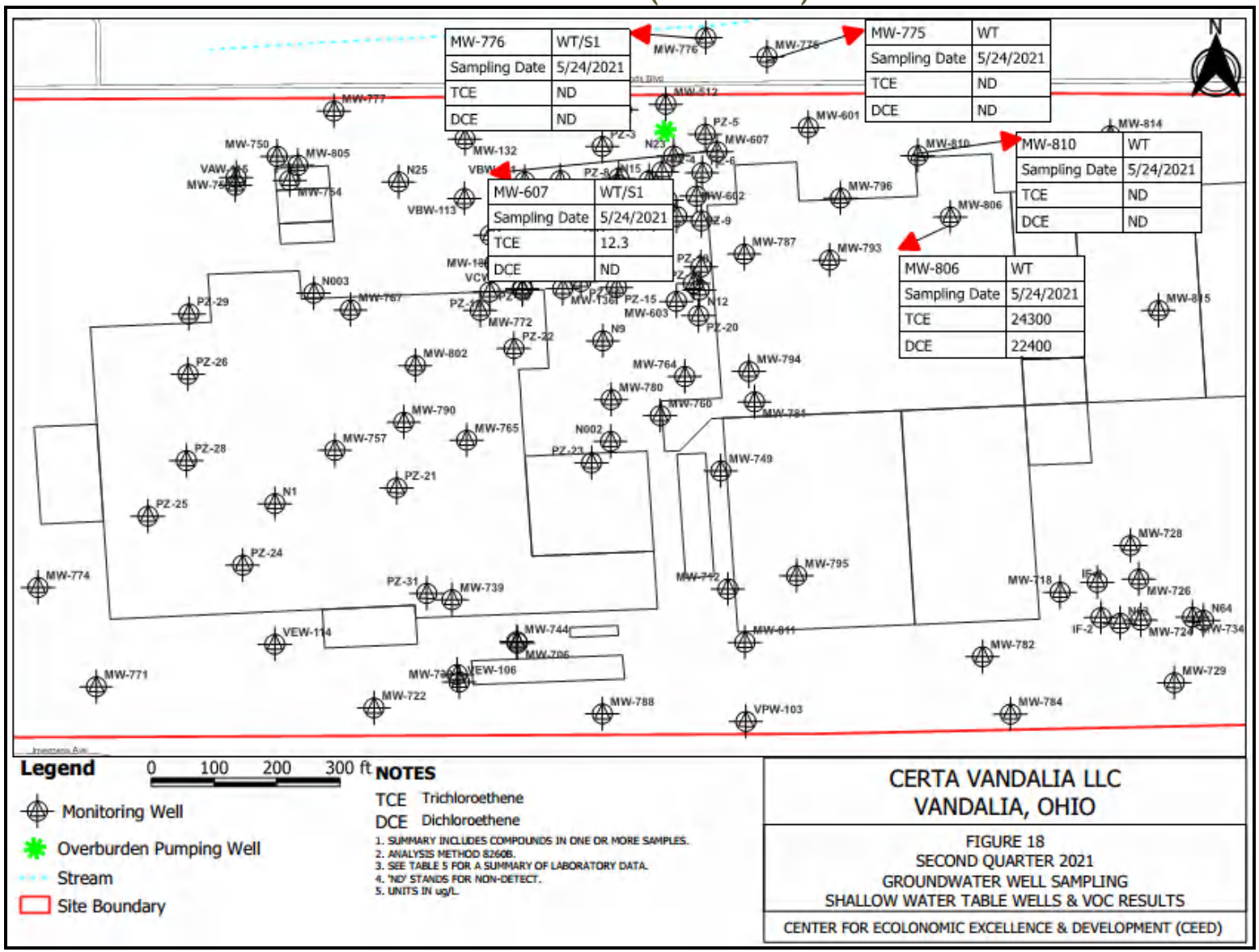


FIGURE 19: SECOND QUARTER 2021 GROUNDWATER WELL SAMPLING- FIRST SAND ZONE AND VOC RESULTS (MAY 2021)

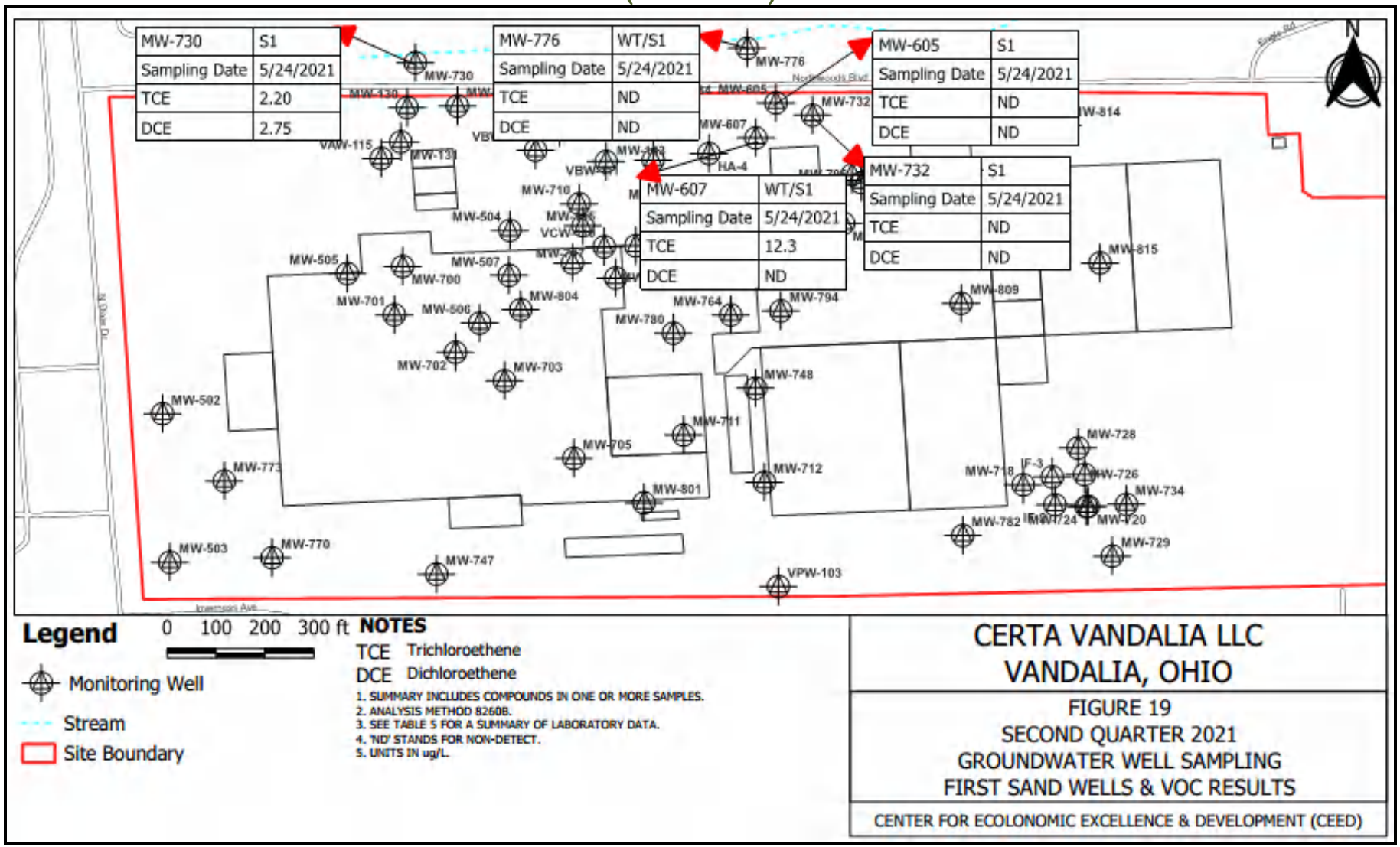


FIGURE 20: SECOND QUARTER 2021 GROUNDWATER WELL SAMPLING – SECOND SAND ZONE AND VOC RESULTS (MAY 2021)

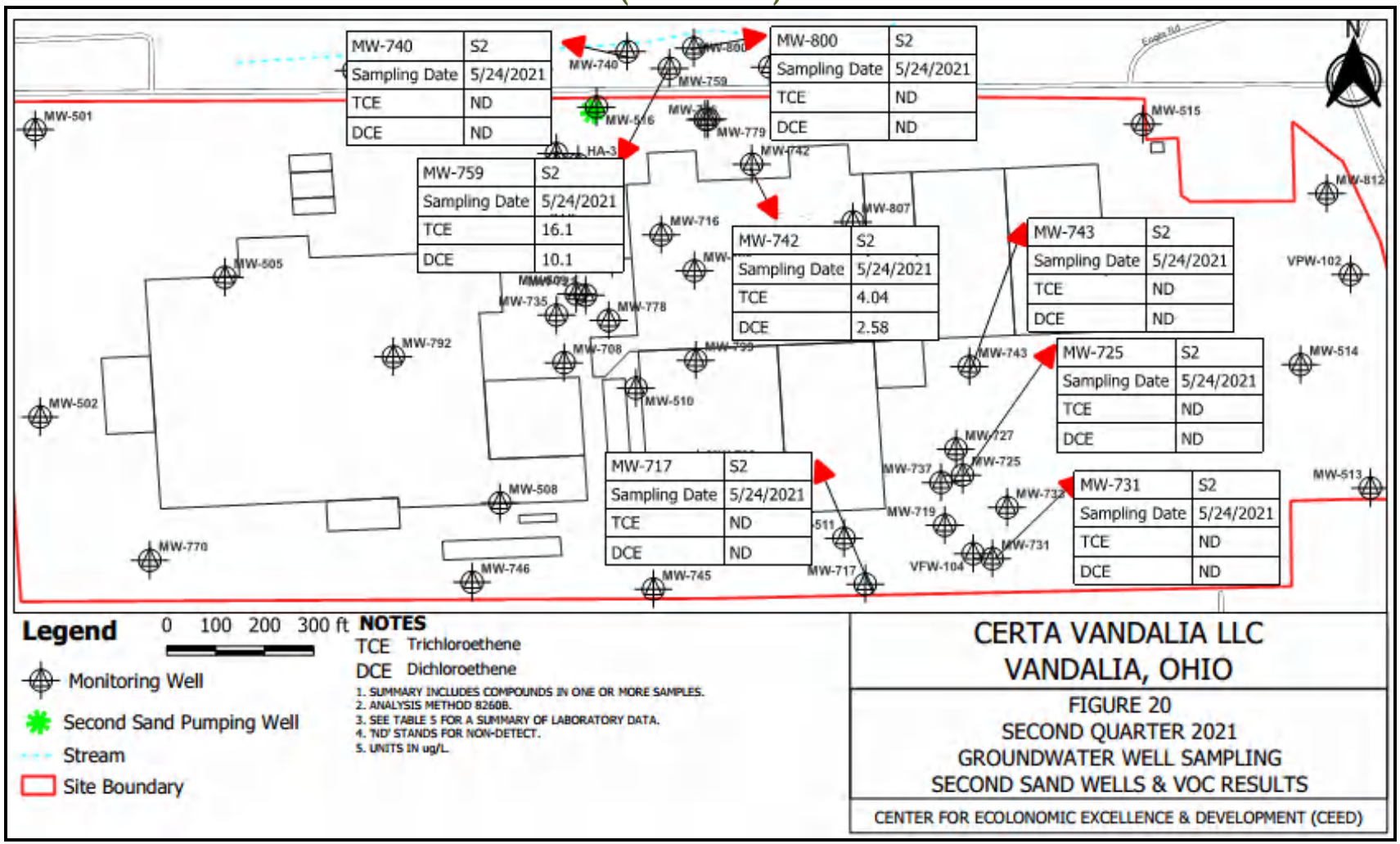
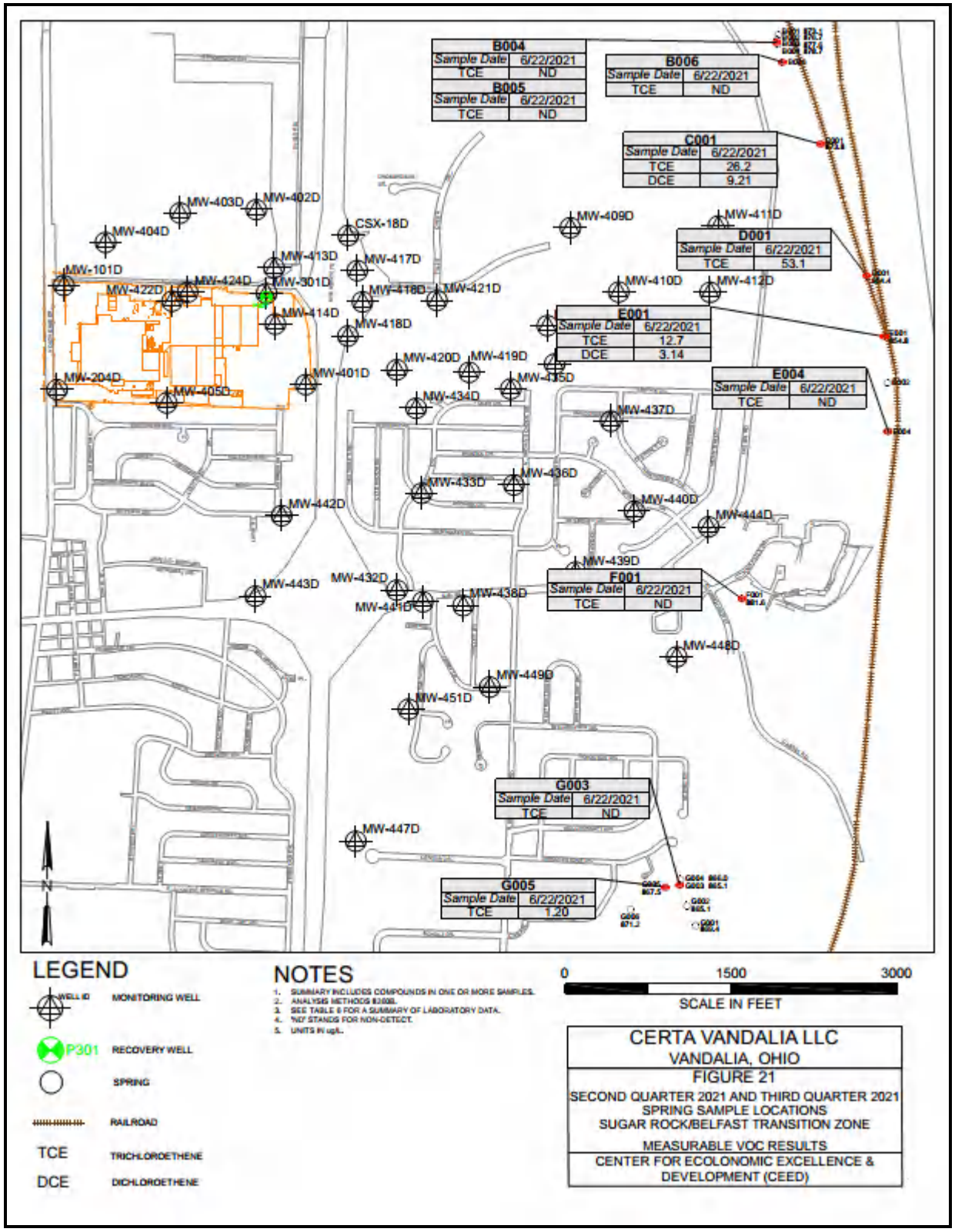


FIGURE 21: SECOND QUARTER 2021 SPRING SAMPLING LOCATIONS AND VOC RESULTS (JUNE 2021)



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ATTACHMENTS

(Attachments included separately due to size of document)